

ARM Manus Research Station

Site Visit 0802M Report

Visit Duration: 05 February to 15 February 2008

Manus Island, Papua New Guinea

# SV-0802M

## Final Report

<b>Site: Manus</b>	<b>Dates on Site: 5 - 15 February 2008</b>
<b>Team Members:</b> BOM1 - Krzton BOM2 - Ryczek	<b>Required Items &amp; Other Actions:</b> <ul style="list-style-type: none"> <li>Floor repair materials - MR to purchase and ship</li> <li>Order VSAT antenna bolts - MR</li> <li>Chain and paddle lock of fuel cap for GENSET fuel tank - BOM to purchase and ship</li> <li>BBSS computer WD tag - Hand-carry from Darwin</li> <li>Observer PC - Hand-carry from Darwin</li> </ul>
<b>Task Summary:</b>	<b>Safety:</b> <u>Major Hazards:</u> Caustic chemicals (KOH), Explosive gas (H2), AC electricity <u>Hazard Controls:</u> BOM Electrolyser Handbook, BM Electrolyzer Operations/Maintenance Training, ASNZS 4836/2001-Safe Working on LV Electrical Installations, 2-man rule  When replacing items (e.g., desiccant, filters, etc.), record and report the quantity of spares left on site.

## SITE TASKS

		High priority / usually non-routine	Low priority / usually routine	Completed
Priority	System	Date Completed (dd/Month)	Service Time (hours)	Tasks For each priority item insert new line (row) for each date/time entry
1	SKYRAD			Move radiometers on K7Z tracker to reflect the following layout: (looking from behind tracker, toward the sun, from left to right) PIR1, B/W, PIR2
		8-Feb		Radiometers moved to reflect the new layout arrangement. Radiometers cleaned, dessicant changed and level adjusted.
2	SKYRAD			Replace faulty Global PSP fan
		8-Feb		Completed. Instrument cleaned and dessicant changed.
	TSI			Change TSI mirror and return to SGP for reglazing.
		11-Feb		Mirror changed. Observers will send it to SGP with other equipment being sent. Dessicant replaced. Mirror waxed and aligned.
	GNDRAD			Change dessicant, clean instruments.
		11-Feb		Dessicant changed. Instruments cleaned
2	H2GEN			Repair Water Treatment plant, carry out annual WTP maintenance.
		6-Feb		Water level found high in the storage tank, dropped water level and plant started ok. Hogen system working well. Will test run for few days and replace level switches.
		7-Feb		Investigating level switches fault. Commenced annual maintenance.
		8-Feb		Continuing WTP annual maintenance. Replacement level switches sent from Darwin are not on site.
		9-Feb		Expecting level switches to be in the shipment currently at Air Niugini Cargo - to be picked up on Monday
		11-Feb		Switches located and installed. Plant tested and operational.
3	H2GEN			Perform Hogen annual maintenance
		9-Feb		Commenced Hogen annual maintenance. Guard bed polishing filter replaced, automatic condensate drain service performed, filters changed.
		10-Feb		Hogen annual amintenance completed.
4	H2GEN			Perform electrolyser maintenance (yearly and 6 monthly) - not done last visit

SITE TASKS				
High priority / usually non-routine		Low priority / usually routine		Completed
Priority	System	Date Completed (dd/Month)	Service Time (hours)	Tasks For each priority item insert new line (row) for each date/time entry
		9-Feb		Commenced electrolyser annual and half yearly maintenance. Compressor head changed, water seal cleaned. Located electrical cabinet safety cover and reinstalled it in the electrical cabinet.
		10-Feb		Electrolyser maintenance completed. Unit tested and operational.
5	MFRSR			Investigate MFRSR shading problem (14:00 to 18:00 local time); e-mail findings to mentor <Gary.Hodges@noaa.gov>
		7-Feb		Checked shading, appears ok. Will need to check again when there is more sun.
		8-Feb		Adjusted MFRSR level at 04:20 UTC
		10-Feb		Awaiting feedback from mentor.
		12-Feb		Mentor advised that data is good since levelling adjusted. Will keep checking shading when weather improves.
		13-Feb		Checked shadowband alignment at solar noon. Adjusted shadow band.
6	BBSS			Hand carry Ground Check Set unit, set it up and train observers on how to use it. Check operation and notify mentor (Ritsche). Locate spare GCS unit.
		6-Feb		Mike Ryczek installed new Ground Check Unit. Taddy will test it during tonight's flight.
		7-Feb		Observers retrained on use of GCU. Dunstan - new replacement observer sent from Port Moresby has been trained on use of GCU and modified balloon table
		9-Feb		Mentor intervention required to verify Digicora ground Check threshold settings. Ground Check in Digicora software has to be skipped in order for the release to proceed. Ground Check Unit is being used to condition the sonde prior to release.
		11-Feb		Digicora setup needs to be verified by mentor to investigate why sondes do not pass Ground Check. Could not locate Manus Spare GC unit on site.
		12-Feb		Made small movie showing Digicora GC problem - will send to TWPP0 and Mike Ritsche.
	MPL			Replace MPL computer
		10-Feb		New GX620 computer installed on the network for mentor to install MPL software. Mentor notified.
		11-Feb		Software installed by mentor. Task completed. Laser power supply interface cable not on site. Will be shipped from Darwin and installed at next opportunity.
	COMMS			Wash VSAT antenna to remove mould.
		9-Feb		VSAT antenna washed. D-Van washed to remove mould growing on the outside.
7	OTHER			Install new observer PC
		6-Feb		In progress. Mike Ryczek installed new observers PC. Currently configuring email accounts.
		7-Feb		Mike Ryczek investigating issues with mail setup and CorePC
		9-Feb		Completed - observer PC installed and mail accounts set up. SDL mentor needs to change Manus SDL to allow for fuel tank level entries in Daily Rounds
8	T/RH			Replace probe (ask Ryczek if this was done on SV-0711M) and do HMI70 check

## SITE TASKS

High priority / usually non-routine

Low priority / usually routine

Completed

Priority	System	Date Completed (dd/Month)	Service Time (hours)	Tasks For each priority item insert new line (row) for each date/time entry
		9-Feb		Probe replaced. Comparison carried out and paperwork forwarded to all concerned.
9	MFRSR			Reconfigure MFRSR logger to enable "all time" data collection
		10-Feb		More information from mentor required. Could mentor please provide instructions as to how to carry this out ?
		16-Feb		This task has already been carried out in the past.
10	H2GEN			Calibrate HOGEN van combustible gas sensors
		10-Feb		Sensors calibrated. Sensor no 1 requires replacement - no spares on site.
11	COMM			Install new firmware images on spare VSAT modem. Verify the operation of spare VSAT modem. Train observers on modem changeover should they ever be required to do it. Install spare new modem in the rack after Adam computers removed.
		7-Feb		New firmware installed. Mike Ryczek trained K Krzton on modem setup, upgrade and installation procedures.
		8-Feb		Modem changeover instruction written and tested. Observers will be trained in coming days.
		9-Feb		Mike Ryczek trained Taddy to change the VSAT modem when required.
		10-Feb		Completed. Old Comstream modems to stay on site as spares should we ever need to revert to using them.
12	BBSS			Prepare RBL table w/ 90-mm storm drain fitting for RS92 sondes. Make list of lugging and other materials required
		6-Feb		Table modified. Sonde retarding cord and velcro strap replaced. Will test modifications at tonights flight.
		7-Feb		Modifications tested during today's morning flight. Release and ambient air exposure work fine. Instructed observers to leave RBL fan on at all time.
		8-Feb		RBL table hydrogen filing hose replaced, due to wear.
13	ORG			Compare w/ ORG calibrator kit
		8-Feb		Faultfinding the ORG
		9-Feb		Comparison performed today, moisture found inside the ORG. Org dried out inside and resealed. Background volatge unusually high - 120mV (manufacturer states that is should be below 85mV) Spare ORG from Darwin will be sent to Manus to be installed by Observers. Observer will be trained on how to install it during this site visit.
14	VANS			Prepare and check whether materials are on site for I- and D-Van floor repair
		9-Feb		Materials not on site yet.
15	GENSET			Fuel tanks locking cap
		10-Feb		Fuel tanks appear to have a locking arrangement installed consisting of a section of chain and a padlock
16	MMCR			MMCR disk problem
		6-Feb		Old 70% full disk connected. Kevin Widener reconfigured system to save spectra data to drive and will reconfigure it to save to hard disk if we run out of space while waiting for empty disks held up at Port Moresby.
		10-Feb		Awaiting disk shipment.

SITE TASKS				
High priority / usually non-routine		Low priority / usually routine		Completed
Priority	System	Date Completed (dd/Month)	Service Time (hours)	Tasks For each priority item insert new line (row) for each date/time entry
		11-Feb		Dick Pears is following up the paperwork and the 2 disk shipments are expected to be on site on Friday.
		12-Feb		Dick advised that disks will be arriving on Wednesday flight.
16	OTHER			Find old ADaM Sun computers (WD2345, WD2346) w/ associated HD and ship to SGP
		10-Feb		Computers and drives located and given to observers to effect shipping.
17	COMM			Set up new phone handset that works w/ Darwin PBX setup - KK
		10-Feb		Investigated phone line setup. To carry this out will require an installation of small PBX at Manus - approximate cost 3000 AUD for PBX, plus handsets approx 700 AUD.
18	MET			Replace METCONSOLE laptop with a dedicated computer.
		10-Feb		Postpone. There is only one spare GX620 computer on site. Using it for Metconsole will leave site with no spares. Metconsole computer will be prepared in Darwin and shipped to Manus.
19	OTHER			Install time card system w/ Hymson's coordination
				Hardware located. Hymson not on site. This seems a rather complex system that is not really suited for Manus. It would be better employed at Nauru.
20	OTHER			Perform routine maintenance per Maintenance Checklist
		10-Feb		In progress.
		11-Feb		Completed
21	BBSS			Affix WD tag to BBSS computer and verify s/n
		10-Feb		This task applies to Nauru site. Manus BBSS computers already has a WD tag attached - WI10576
	SAFETY			Investigate relocation of the electrical cable conduit running on the ground.
		11-Feb		Purchased suitable conduit and fittings. This modification will require an electrician to carry out. There is no separation between power and light circuits at the moment.
22	OTHER			Check ARM Kiosk
		12-Feb		Kiosk checked - requires new UPS battery.
	OTHER			Carry out audit of the instruments and spares
		12-Feb		Audit carried out.
	SHIPPING			List items to be shipped following visit
				Std T/RH probe (HMI70) and probe head (HMP75) to SGP for calibration
				Sun computers (WD2345, WD2346) w/ associated HDs to SGP for decommissioning
				Failed MMCR spectra drive
				Faulty sondes.
	FUTURE NEEDS			List items needed for future visits (spares, etc.)
				2 spare combustible gas sensors for Hogen van
				2 spare WTP level switches. SAP mat no 101228
				Replacement Iridium phone. One at Manus is not working.
				Hogen bi annual maintenance kit
				Hogen annual maintenance kit
				2 water tanks to be installed to collect water of new roof.

SITE TASKS				
High priority / usually non-routine		Low priority / usually routine		Completed
Priority	System	Date Completed (dd/Month)	Service Time (hours)	Tasks For each priority item insert new line (row) for each date/time entry
				Small stainless steel wash basin.
				New Metconsole computer - fix AWIB system
				Paint to paint VSAT dish
				Paint to seal fibroglass on instrument stands (SKYRAD,GNDRAD)